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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,398	01/24/2001	Conrad F. Fingerson	9538.21US01	1353
23552	7590	03/01/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			MCDERMOTT, KEVIN	
			ART UNIT	PAPER NUMBER

3635

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/768,398

Applicant(s)

FINGERSON ET AL.

Examiner

Kevin McDermott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6, 7, 10-13, 15-17, 24 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 17 and 28-30 are objected to because of the following informalities:

- a. Claim 17 recites "a first reinforcing member" in line 2 and "a second reinforcing member" in line 3. Are these the same as the reinforcing members claimed in claim 1? Examiner interpreted "a first reinforcing member" as "one of the reinforcing members" and interpreted "a second reinforcing member" as "another of the reinforcing members".
- b. Claim 29 depends from claim 25, but claim 25 does not exist. Examiner assumed that claim 29 depended from claim 28.
- c. Additionally, claims 28-30 should be renumbered 25-27. The highest numbered claim entered prior to filing the RCE was claim 24. Numbering should continue with 25.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, the specification does not describe the reinforcing members being used to mount the utility cross-arm to a pole and being used for mounting insulators.

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Rather, the specification discloses using the reinforcing members as inserts within the cross-arm to reinforce the cross-arm.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 15, 16, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiles.

Regarding claims 1, 6, and 28, Wiles discloses in figures 1 and 2 and in 2, line 24 to column 3, line 43, a utility pole 10 having a composite cross-arm 12 used for supporting utility lines 13 attached to the cross-arm by means of eyelets 14.

The cross-arm 12 has an outer casing 18 of resin impregnated fiberglass material. The outer casing 18 has opposite upper and lower load walls 20, 22 which are parallel to each other and are joined together by opposite side walls 24. The side walls 24 are laterally spaced apart and are parallel to each other so that the outer casing 18 has a generally rectangular cross section.

Formed in the upper and lower load walls 20, 22 are holes 26 which are aligned for receiving a bolt 28. The holes 26 are transverse when the arm 12 is rotated so that the walls 20, 22 are vertical.

Positioned within the interior of the outer casing 18 is a cylindrical steel sleeve 42. The sleeve 42 has a length which is substantially equal to the distance between the

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inner surfaces of the upper and lower walls 20, 22. The sleeve 42 has a central bore 44 and surrounds the shank of the bolt 28 with the central bore 44 being slightly larger than the diameter of the shank of the bolt 28. This allows the sleeve 42 to move slightly along the length of the bolt 28 between the upper and lower load walls 20, 22.

When the sleeve 42 is properly positioned within the interior or the outer casing 18, the holes 46 of the sleeve 42 align with apertures 50 formed in the midsection of each sidewall 24. Each of the holes 46 holds a steel cross pin or rod 48 which extends outward and is closely received within one of the apertures 50 formed in the mid-portion of the sidewalls 24 and that the cross pin 48 is held tightly in place.

The composite cross arm 12 is the claimed hollow fiber reinforced beam having a plurality of holes 26. The sleeves 42 are the claimed plurality of hollow reinforcing members placed inside of the arm 12 such that one sleeve 42 is aligned with each hole 26. The sleeves 42 each have a first surface defining an inner diameter approximately the same as the diameter of holes 26 and a second surface defining an outer diameter that is greater than the diameter of hole 26. Both the inner and outer diameters of sleeve 42 are disposed within the arm 12. The sleeve 42 is the claimed reinforcing member and a bolt 28 is inserted through the holes 26 and the sleeve 42 aligned with each hole 26.

Regarding claim 2, the sleeve 42 has a length sufficient to fit within the walls 20, 22.

Regarding claim 3, even though product-by-process claims are defined by and limited by the process, determination of patentability is based on the product itself. The

patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. Consequently, the method of manufacturing steps recited in claim 3 do not further limit the support structure claimed in claim 1.

Regarding claims 15 and 16, they are simply statements of intended use and does not further limit the support structure recited in claim 1.

Because Wiles discloses the structural limitations recited in claims 1-3, 6, and 15, it is inherently capable of performing the same functions and of being used in the same way.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiles.

The disclosure of Wile is discussed above. However, Wiles does not specifically disclose the inner diameter of the bore 44 as equal to or about 2.5 cm.

It would have been an obvious matter of design choice to make the bore diameter equal to or about 2.5 cm, since applicant has not disclosed that doing so solves any stated problem or is for any particular purpose.

One of ordinary skill would make such a modification to accommodate a bolt 28 having a diameter of about 2.5 cm.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiles in view of Fingerson and further in view of Hawley's Chemical Dictionary.

The disclosure of Wiles is discussed above. However, Wiles does not disclose making the sleeve 42 of a fiber reinforced resin.

Fingerson discloses in figures 2, 3, and 6, and in column 4, line 29 to column 6, line 30, a utility line support structure 10 including a hollow pultruded beam 20 having transverse holes 22 extending therethrough. Beam 20 is made using glass fibers and liquid resin to result in a cured product having a uniform cross section. Bushings 30 are inserted into the transverse holes 22 and include hollow inner member 32/33 and a pair of integral washers 34 arranged on opposite ends of inner member 32 and against outer surface 24 of beam 20. The bushing supports axial loads which can be applied by mounting bolts 60, bolts for attaching the insulators 62, or other structure attached to a bushing 30 for supporting a utility line. The primary purpose of the bushing arrangement is to provide structural support to prevent compression damage to beam 20 as would otherwise occur when bolt 60 is tightly torqued.

Additionally, Fingerson discloses the bushings 30 being made of plastic. Plastic is made from a resin and polyester is a plastic. However, Fingerson does not specifically disclose the bushing being made from fiber reinforced resin.

Hawley's Chemical Dictionary discloses that plastics can also be reinforced, usually with glass or metallic fibers, for added strength. Fingerson also discloses reinforcing the beam 20 with glass fibers.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the sleeves 42 of Wiles of fiber reinforced plastic.

One of ordinary skill would have made such a modification to make the sleeves 42 lighter.

Claims 12, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiles in view of Koye.

The disclosure of Wiles is discussed above. Additionally, Wiles discloses steel end plates 40 seated against the exterior surfaces of the upper and lower walls 20, 22. The end plates 40 seal the openings 26. However, Wiles does not disclose the arm 12 including an end cap.

Koye discloses in figures 1 and 7, and in column 2, lines 9-35, a cross-arm 10 typically used for supporting a plurality of transmission lines on a vertical utility pole, comprising an elongated, generally hollow bar member 11 molded from synthetic material. The bar member 11 preferably has a substantially rectangular shape, although other cross sectional shapes are possible.

Center through holes 30b, 31b enable the cross-arm 10 to be horizontally mounted to a utility pole or other support pole, and the end through-holes 30a, 30c, 31a, 31c enable one or more cross arms 10 to be bolted together as a single unit. Holes



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30b, 31b, 30a, 30c, 31a, and 31c are all considered transverse holes, depending on the orientation of the cross-arm 10.

Column 3, lines 12-14 disclose the cross-arm 10 being made from a sheet molding compound of polyester glass reinforced plastic. Glass reinforced plastic is fiber reinforcing.

The centrally located through-holes 30b, 31b in the front and rear walls 20, 21 of the cross-arm receive a nut and bolt-type fastener 32 that secures the cross-arm 10 directly to the pole 40.

The cross arm 10 has end caps 42.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the arm 12 of Wiles by including end caps.

One of ordinary skill would be motivated to make such a modification to seal the arm 12 of Wiles to prevent animals and insects from building nests in the interior of the arm 12.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiles in view of Koye and further in view of Fingerson.

The disclosures of Wiles, Koye and Fingerson are discussed above. However, neither Wiles nor Koye disclose an end cap entrapping the ends of a cross arm.

Fingerson's disclosure is discussed above. Additionally, Fingerson discloses end caps 50 being plastic molded and an appropriate adhesive 52 applied to an inner side 54 of peripheral walls 56 of end caps 50 to sealingly secure end caps 50 to outer

surface 24 of beam 20. The end caps 50 are to prevent moisture from entering the beam 20.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wiles by including end caps that entrap the ends of the cross-arms.

One of ordinary skill would have made such a modification to prevent moisture from entering the arm 12 of Wiles.

Claim 17 as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiles in view of Hoyt (U.S. Patent No. 2,318,396).

The disclosure of Wiles is discussed above. However, Wiles does not disclose using the sleeve 42 of Wiles to mount an insulator on a cross arm 10 and using the sleeve 42 to mount a cross-arm on a pole.

Hoyt discloses in figures 1-3 mounting insulators I on a utility pole cross-arm and mounting the cross-arm on a utility pole.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the cross-arm of Wiles on a pole and to mount insulators on the cross-arm 12.

One of ordinary skill would have made such a modification to prevent compression damage to the cross-arm 12.

### ***Response to Arguments***

Applicant's arguments with respect to claims 2-4, 6, 7, 10-13, 15-17, 24, and 28-30 have been considered but are moot in view of the new ground(s) of rejection.

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***Allowable Subject Matter***

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose, and it does not appear obvious to modify the prior art to disclose, a support structure having the structural limitations of claim 1, wherein the reinforcing member is held in place with an adhesive forming a watertight seal between the reinforcing member and the beam, and wherein the reinforcing member is held in place by filling the beam with a foam forming a watertight seal between the reinforcing member and the beam.

Claim 24 is allowed.

Regarding claim 24, the following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose and it does not appear obvious to modify the prior art to disclose a utility line support structure having the structural limitations of claim 24, and further holding the reinforcing members in place using foam.

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**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kevin McDermott, whose telephone number is 703-308-8266.



Carl D. Friedman  
Supervisory Patent Examiner  
Group 3600



KM 2/20/04